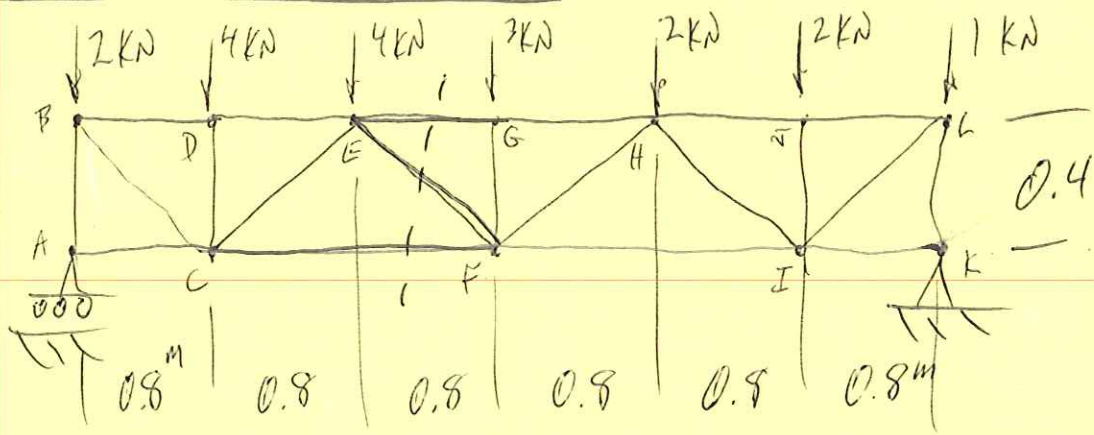
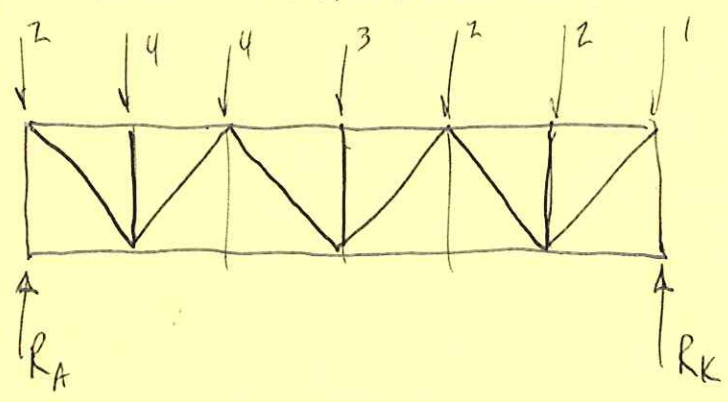


EXAMPLE PROB. 6.47



FIND FORCES IN CF, EF, EG

FIRST FIND REACTIONS.



$\sum F_y = 0:$

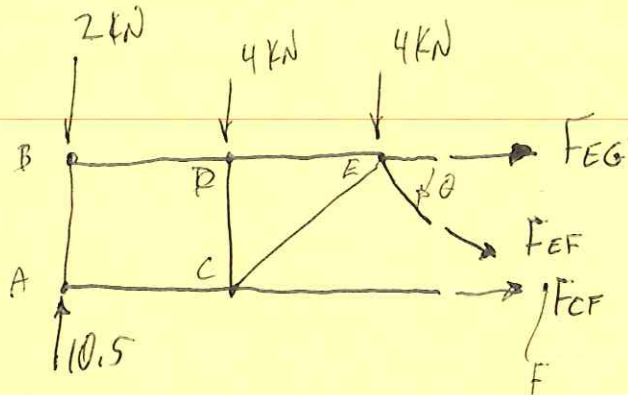
$R_A + R_K = 18$

$\sum M_A = 0: +\curvearrowright$

~~(4.8m)~~  $(4.8m) R_K = (4kN)(0.8m) + (4)(1.6) + (3)(2.4) + (2)(3.2) + (2)(4) + (1)(4.8)$

$$R_k = 0.5 \text{ kN} \quad 7.5 \text{ kN}$$

$$R_A = 18 - 7.5 = 10.5 \text{ kN} \quad 10.5 \text{ kN}$$



$$\theta = \tan^{-1}\left(\frac{0.4}{0.8}\right) = 26.5^\circ$$

$$\vec{F}_{EF} = (\cos 26.5^\circ F_{EF}) \hat{i} + (-\sin 26.5^\circ F_{EF}) \hat{j}$$

$$\vec{F}_{EF} = (0.895 F_{EF}) \hat{i} + (-0.446 F_{EF}) \hat{j} \quad \text{kN}$$

$$\sum F_y = 0:$$

$$10.5 - 2 - 4 - 4 - 0.446 F_{EF} = 0$$

$$F_{EF} = 1.12 \text{ kN} \quad (\text{TENSION})$$

$$\sum M_E = 0 \quad (+\uparrow)$$

$$(1.6 \text{ m})(2 \text{ kN}) + (0.8)(4) - (1.6)(10.5) + (0.4) F_{CF} = 0$$

$$F_{CF} = 26 \text{ kN} \quad (\text{TENSION})$$

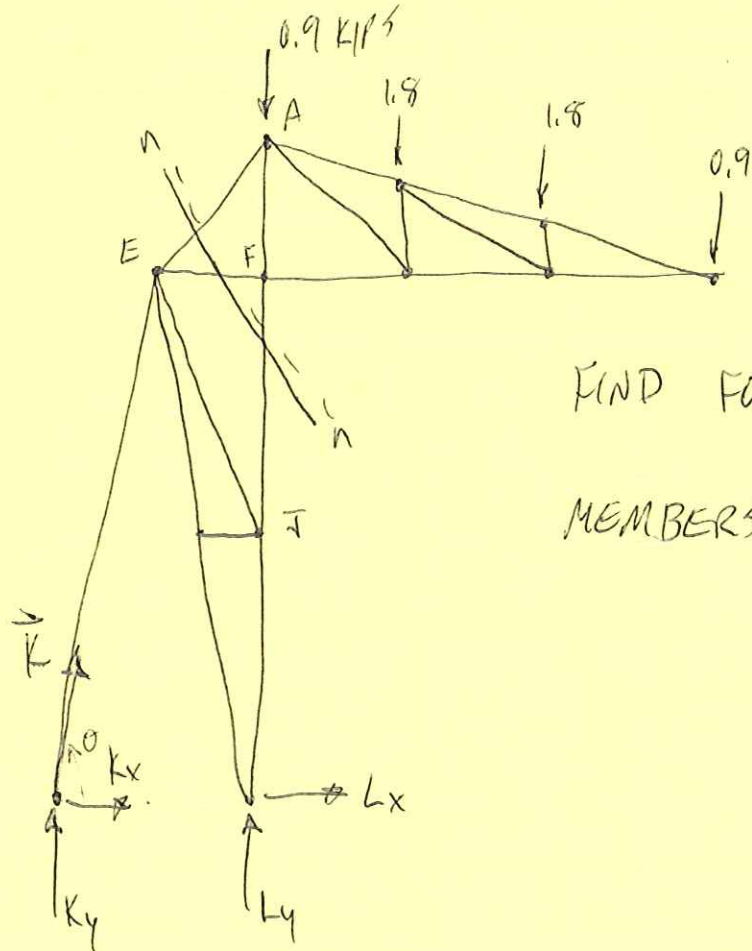
~~EXAMPLE~~  $\sum M_F = 0 \rightarrow$

$-(2.4^m)(10.5 \text{ kN}) + (2.4)(2) + (1.6)(4) + (0.8)(4)$

$-(0.4) F_{EG} = 0$

$F_{EG} = -27 \text{ kN}$  (COMPRESSION)

EXAMPLE PROB. 6.56



FIND FORCE IN  
MEMBERS AE, EF, FJ